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Overcrowding In The Emergency Department: A Barrier To Health Care Access

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OVERCROWDING IN THE EMERGENCY DEPARTMENT:

A BARRIER TO HEALTH CARE ACCESS

by

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Abstract

Patterns of access for primary health care have placed additional strain on emergency departments (EDs). Issues related to these patterns were explored in this ex post facto study. Johnson's Behavioral Systems Model (1968) provided the conceptual framework. The following research questions were explored: What is the incidence of ED patients leaving without being seen by a health care provider? What are the demographic characteristics of ED patients who leave without being seen? How do demographic characteristics of ED patients who leave compare to those who are seen by a health care provider? And what are the reasons given by patients for leaving without being seen by a health care provider? Data were obtained from a chart review and a voluntarily completed telephone interview. The sample consisted of patients (N = 671) who presented to the ED during the peak activity hours between 7:00 a.m. and 11:00 p.m. over a 14-day period and received a non-urgent classification at the time of triage. The sample was subdivided into two groups. Group A (n = 647) represented all patients who stayed to be treated by a health care provider and Group B (n = 24) represented all patients who left the ED without being seen by a health

care provider. Seventy percent of the patients were non-urgent; of these, 4% left without being seen. The average length of stay prior to leaving was 1.6 hours, and the mean length of time between onset of symptoms and request for treatment was 4.4 days. The majority of the patients who left without being seen by a health care provider were single, black males who were unemployed and underinsured, whereas the largest percent of ED patients who stayed for treatment were single, black, unemployed, and underinsured women. The most frequently given reason for leaving the ED without treatment was having to wait too long. Recommendations for future research include comparisons of triage classification and actual patient acuity at completion of treatment, physician acceptance of the NP role, and finally the impact on access to care after implementation of an NP staffed ED fast-track.

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Chapter I

The Research Problem

According to the American Hospital Association, nationwide emergency department (ED) visits are rising from 3% to 5% annually, reaching 94 million in 1991 (Greene, 1992). The high cost of insurance and deficiencies in primary care provider networks have made it difficult for individuals to access health care. As a result, hospitals have become primary health care access points. Greene (1992) reported that ED physicians estimate one third of all visits made to their services are made by nonemergency patients. This dilemma has created an oppressive burden of overcrowding for some EDs (Baker, Stevens, & Brook, 1991). Problems resulting from overcrowding have been well-documented and range from overstressed staff to delays in treatment. Overcrowding disrupts quality care and may precipitate some patients not getting care at all (Teng, 1994). This fact was further confirmed by L. Barrett and L. Griffin (personal communication) and Garner (1993) who noted ED overcrowding and the increased wait time resulted in patients leaving without being seen by a health care provider and

consequently diminished the usefulness of the ED as a point of access to primary care.

One suggested solution to ED overcrowding is the hospital redirecting (fast-tracking) patients with minor illnesses to a more appropriate setting for care. According to reports obtained by Theodore Matson, President of the Ambulatory Care Advisory Group, a consulting firm, this concept of fast-tracking nonurgent patients can reduce patient volume in EDs by as much as 50%, decrease wait time from hours to minutes, and improve the quality of care (Greene, 1992). To further substantiate the need for this concept, the focus of this research was to identify ED users and the incidence of and reasons for ED patients leaving without being seen by a health care provider.

Establishment of the Problem

Jack Allison, MD, President of the American College of Emergency Physicians (ACEP), stated, "We do not have a system of health care that guarantees patients get the panoply of primary, preventative, emergency and catastrophic care" (Greene, 1992, p. 52). The ED has become a catchall for patients who need primary care (Greene, 1992). The milieu of increasing numbers of uninsured or underinsured patients has made private physicians reluctant to treat patients who cannot pay for services, and patients have become aware of the

convenience of EDs. Shesser, Kirsch, Smith, and Hirsch (1991) validated the use of the ED as a source for primary health care. Shesser et al. identified factors contributing to the use of the ED as a source for primary care: lack of a personal health care provider, inability to make an expedient appointment with a provider, and the ease of access to the ED.

EDs were unprepared for the onslaught of these patients, resulting in prolonged waiting times and deterioration of care for those seeking care in these departments. Studies have shown that 4-8% of ED patients leave without receiving care, especially those seeking primary care (Bindman, Grumbach, Keane, Rauch, & Luce, 1991). According to Baker et al. (1991), factors such as length of time patients wait and feeling too sick to wait significantly influence walkout rates. Baker et al. noted that patients who left had waited as long as 6.4 hours before leaving and that almost half of those who left were in need of immediate care. Additionally, 25% of the patients who left were rated as being in need of care within 24 to 48 hours. Such studies have demonstrated that some ED patients are not receiving service and that EDs actually contribute to perpetuating lack of health care access. The assumption researchers have made is that serious problems with access to care exist (Teng, 1994). Little research has been done to explore the impact of ED

utilization as a source for accessing primary care. Therefore, this study focused on identifying ED users and substantiated the incidence of and reasons for ED patients leaving without being seen by a health care provider. Information obtained from the results can increase the understanding of this phenomena, thus promoting the development of appropriate strategies to positively impact the problem of diminished health care access caused by ED overcrowding.

Significance to Nursing

The problem of primary care access is more complex than just lack of insurance and an ability to pay for services. For instance, changes in technology attract new physicians into specialties, thus fewer physicians are choosing general and family practice, which contributes to severe shortages of physicians available to provide primary care. In view of the lack of primary care physicians, the utilization of nurse practitioners as an alternative provider in the ED is being considered as a strategy to improve health care access (Curry, 1994).

Nurse practitioners are currently providing care for ED patients. Tentative estimates indicate that at least 1% (320) of all nurse practitioners practice in the ED setting (Curry, 1994). Many reports have demonstrated the effectiveness of nurse practitioners in the delivery of such patient care (Dowling, 1993; Powers, Jalowiec, &

Reichelt, 1984). Some hospitals have embraced the concept of redirecting or fast-tracking patients who after triage screening are classified as having nonurgent health problems (Dowling, 1993; Greene, 1992). NPs who provide care for fast-track, nonurgent patients can improve access to primary health care and health care delivery systems, reduce overcrowding, and decrease ED waiting time. Advanced practice nurses have demonstrated the ability to provide primary health care and can serve as cost-effective providers (Powers et al., 1984).

Although the United States spends billions of dollars per year for health care, many Americans lack access to basic primary health care or the means to pay for it. The American Nurses' Association (ANA) clearly supports more effective utilization of registered nurses to provide primary health care services as part of the solution to the cost and accessibility problems in health care today (ANA, 1993). Information obtained from this study can facilitate a better understanding of ED utilization as a source of primary care for all health care professionals. This research can further support the utilization of the NP within the ED by identifying a patient population impacted by lack of access to care and treatment for minor illness and by providing data justifying the NP role in the ED.

The application of Johnson's (1968) Behavioral Systems Model provided a framework with which to study patients' use of the ED for access to primary care. Thus, the use of Johnson's model for this research expanded the application of the model.

Conceptual Framework

Johnson's (1980) Behavioral Systems Model provided the theoretical basis for this study. Johnson has asserted that a system is a whole that functions as a whole by virtue of the interdependence of its parts (Marriner-Tomey, 1989). As conceptualized by Johnson (1980), man is a behavioral system composed of subsystems which strive to maintain balance through adjustment and adaptation to impinging forces. Imbalance is experienced when a subsystem is stressed from either a biological, sociological, or psychological source. This imbalance may result in the system responding by developing specific behaviors to cope/react to that stress.

Biological, sociological, and psychological stressors create physical illness which leads to a state of disequilibrium in patients. In response, patients are motivated to reestablish equilibrium by seeking health care. Abandonment of health care seeking behavior, leaving EDs without being seen, perpetuates disequilibrium. The stressors which cause patients to seek care in an ED can

be motivated by lack of access to a private physician and lack of time.

Johnson (1968) describes that the task of nursing research is "to identify and explain the behavioral system disorders which arise in connection with illness, and develop the rationale for and means of management" (p. 2). Johnson perceives man as a behavioral system made up of subsystems which continuously strive to maintain balance through adjustments to factors which influence the system. Johnson's (1980) model established seven subsystems to which specific tasks are assigned: Attachment-Affiliative, Dependency, Ingestive, Eliminative, Sexual, Achievement, and Aggressive (Marriner-Tomey, 1989). Johnson (1980) defines the Attachment-Affiliative subsystem as the most critical. In this study, imbalance in access to care heavily impacts this subsystem. When a person is sick, the Attachment-Affiliative subsystem functions to prompt health care seeking behavior to reestablish equilibrium. The nurse practitioner, as an alternative health care provider, could reduce the stress on this subsystem by improving primary care access.

Assumptions

For this research, the following assumptions were accepted:

1. Lack of access to primary health care providers is a stressor as defined by Johnson's (1980) Behavioral Systems Model.

2. Patients access primary care in the ED, thus providing the milieu for overcrowding.

Research Questions

The following research questions guided this study:

1. What is the incidence of ED patients leaving without being seen by a health care provider?

2. What are the demographic characteristics of ED patients who leave without being seen by a health care provider?

3. How do demographic characteristics of ED patients who leave compare to those who are seen by a health care provider?

4. What are the reasons given by patients for leaving without being seen by a health care provider?

Definition of Terms

The terms defined in this study were as follows:

Incidence: the occurrence of patients who leave without being seen by a health care provider measured as a percentile of the total patients who presented for care during data collection.

Emergency department patient: individuals who register at the ED, are triaged, and receive a nonurgent classification.

Leaving without being seen: the act of an ED patient leaving the ED after triage without being treated by a health care provider and documented as such on the patient record.

Health care provider: an individual who is qualified by licensure and/or certification to provide medical care in the private hospital setting and is assigned to or requested by the patient.

Demographic characteristics: continuous and categorical variables existing within the study sample including age, sex, race, marital status, employment status, and insurance status. These variables were obtained through chart review of the information provided by the patient at ED registration.

Chapter II

Review of the Literature

This review of literature focused on several areas which contributed to the understanding of patients who leave EDs without being seen, queuing for care in the ED, use of the ED as a source for primary care, and ED utilization of nurse practitioners as primary health care providers. After extensive review only three studies were found concerning the research topic. This lack of data indicated a clear need to explore the ED population and utilization.

Baker, Stevens, and Brook (1991) conducted a study to determine acuity levels of patients who left the ED without being seen and to ascertain if these patients obtained care after leaving. The researchers described increasing ED overcrowding as being caused, in part, from a growing demand for primary care services. Associated with overcrowding, there was an increase in the number of registered patients who left without being seen by a physician.

Baker et al. (1991) focused on patient acuity, how many patients who left needed immediate examination and treatment, the length of wait time, the length of stay

prior to leaving, the reason for leaving, and if care was sought and obtained from another source after leaving. A comparison was made between those who stayed and those who left. The comparison focused on urgency of need and perceived health status upon request for ED care. This study was conducted in a Level I trauma center in California over a 2-week period and included a sample of patients (N = 186) who left without being seen after registration. Questionnaires were used to obtain data during the ED visit and again one week later by telephone. Patient records also were used as data sources. Health status was assessed using the Medical Outcomes Study Short-Form General Health Survey, and descriptive statistics were used for data analysis. No differences were noted in demographic characteristics, health status, or urgency when data comparisons were made.

Baker et al. (1991) concluded that patients who left had the same need for care as those who stayed, and those who left were no less willing to wait for service. Conclusions from this study indicate that EDs are being utilized as an access point for primary care by patients requesting care for nonurgent illnesses. Additionally, this study further indicates that ED overcrowding at this research site impacts the provision of quality care by delays in care to more emergent cases.

Decreased access to primary care and the resultant ED overcrowding have increased wait times and the number of patients who leave without being seen by a physician. Bindman, Grumbach, Keane, Rauch, and Luce (1991) studied whether the length of wait contributed to patients leaving and if leaving adversely affected patient's health. Patients who presented to the ED were surveyed regarding demographic characteristics, patterns of health care, and acute and chronic health status. This observational cohort study surveyed ED patients after triage and again 7 to 14 days after the actual visit. A comparison of responses from patients who left and those who were seen was made.

The sample (*N* = 700) included English, Spanish, or Cantonese speaking adults waiting to be seen in an ED. Health status was measured using standardized questions and a chronic disease checklist taken from the MOS Short-Form General Health Survey. The nursing triage record served as a source for the patient's chief complaint and acuity score. The follow-up survey information was obtained from patients completing the survey by telephone, mail, or in person. A thorough search for health care encounters was performed and the assumption made that if an encounter with one of the participants was not found one did not occur (Bindman et al., 1991).

The impact on health status was measured by comparing changes in self-reported health status of patients seen

and those who left. Of the 700 participants, 15% left without being seen. Demographic characteristics of the two groups were not significantly different. Wait times ranged from 5 minutes to 17 hours (median, 2 hours and 53 minutes). Results showed patients were more likely to leave as wait times increased. Comparison of median wait times revealed patients who left would have had an additional 52-minute wait to be seen. An average wait time of 3.5 hours was reported at follow-up by patients who left without being seen. Five percent of patients who left waited less than an hour before leaving (Bindman et al., 1991).

Several reasons were given for leaving. The most important reason given for leaving without being seen was that the wait was "just too long." Almost twice as many patients who left reported an increase in perceived pain and seriousness of their problem at the time of follow-up. Adjustment in health status scores made no difference in changes in health between the two groups.

Among the 102 patients who left the ED, 55 (55%) did see a physician within one week. More significantly was the fact that 50% of patients who left returned to the ED. Seventeen percent of patients who left were unable to see a physician. Only 3% of patients who left saw a non-physician health care provider. Bindman et al. (1991) found an association between wait times and the incidence

of leaving without being seen. Typically those patients leaving had less acute problems than patients who were seen.

Research by Shesser, Kirsch, Smith, and Hirsch (1991) focused on describing why patients used the ED for treatment of nonurgent illnesses and comparing those patients with others who utilized the ED. Study group participants were interviewed, and data were tabulated concerning medical history, occupation, education, income levels, and reasons for ED use. Participants were asked to state the length of time from the decision to seek care until seen by a physician. No significant difference was noted between the two groups in any of the demographic or social class characteristics.

The study group's most frequently stated reason for using the ED was the ease of use, followed by participants who had no other source for care, patients who were unsuccessful in making appointments with a traditional provider, and patients who were sent to the ED by referral. Reasons for use were categorized by sex, income, race, insurance status, and education. Men tended to use the ED because of no identified medical provider whereas women sought care in the ED because of wanting to be seen quickly and access to a variety of provider types. Blacks typically preferred the ED because of easier access

whereas greater portions of whites, Asians, and Hispanics were typically referred to the ED.

Study group participants with higher incomes, education, and insurance coverage used the ED after unsuccessful attempts to get appointments with usual providers or were referred. Participants with lower incomes and education levels who had either no insurance or government insurance reported using the ED because of convenience and the lack of preexisting providers. The ideal elapse time identified was from 20 to 26 hours. No significant difference was noted in urgency ratings.

Shesser et al. (1991) concluded there was no disproportionate use by lower socioeconomic classes seeking care for minor illness. Results revealed that minor illness patients were well-educated, insured, employed, and had income similar to the general ED population. The exact reason for ED use varied. All wanted access to professional attention for minor illness within one day. This research clearly supports that EDs are where some patients are accessing care.

In conclusion, research reveals deficiencies in access to health care (Baker et al., 1991; Bindman et al., 1991; Shesser et al., 1991). Data clearly establish ED overcrowding as a national problem and indicate that the problem with access to traditional primary care providers has contributed to overcrowding (Baker et al., 1991). In

an attempt to further understand ED utilization, Shesser et al. (1991) attempted to analyze and compare data concerning ED users and why the ED was used to access primary care. This study sought to provide additional research to contribute to understanding the impact of ED overcrowding and access to care.

Chapter III

The Method

This study sought further understanding of the dilemma of ED overcrowding and its consequences on access to health care. Demographic variables were used to describe the ED population. Additionally, a questionnaire was utilized to gather data describing factors contributing to and reasons for patients leaving without being seen. Therefore, the purpose of this study was to identify and compare demographic characteristics of ED users and substantiate the incidence of and reasons for ED patients leaving without being seen by a health care provider.

Design of the Study

A descriptive ex-post facto research design was used to illuminate the incidence of and reasons for patients leaving the ED without treatment. In addition, data were used to describe and compare demographic characteristics of ED patients who left without being seen with those who stayed for treatment. Data were gathered after patient registration; therefore, no researcher intervention occurred.

Limitations

While the lack of information in this area established a need for additional study, the likelihood of bias must be considered. The length of data collection was limited by the selection of a time frame, a 2-week period. This time frame was short enough that variations in patient census and acuity could influence study variables. In addition, the continuous and categorical variables were recorded from data provided by the patient at time of registration, consequently leaving room for incorrectness. While the researcher sought to add to the data base of current research concerning ED overcrowding and access to primary care, it may be difficult to generalize the study findings to all EDs.

Setting, Population, and Sample

A private hospital's ED in Northeast Mississippi served as the setting for this study. The hospital ED is classified as a Level II center accredited by the Joint Commission for Accreditation of Health Care Organizations and serves a seven-county catchment area. The ED health care providers treat approximately 125 to 130 patients daily. In 1995 the annual volume has been projected to reach 48,000 visits. The hospital has provided a full range of comprehensive medical care.

The population for this study consisted of patients who presented to the ED between peak activity hours of

7:00 a.m. and 11:00 p.m. during a 2-week period beginning on April 17, 1995, and ending on April 30, 1995. The study sample (N = 671) consisted of patients who presented to the ED between peak activity hours of 7:00 a.m. and 11:00 p.m. and received a nonurgent classification at the time of triage. The sample was obtained from ED log books and triage records collected during the study period to allow for a representative sample. The sample was subdivided into two groups: those who after triage were seen by a health care provider (n = 647) and those who after triage left without being seen (n = 24). Confidentiality was protected as only medical record numbers were used for data gathering instead of client names. After analyses data were destroyed.

Method of Data Collection

Instrumentation. Data collection instruments included two researcher-developed tools, emergency department log books, and patient charts. The first instrument, the Blaine Demographic Tool, was used to record demographic data regarding patient's age, sex, race, marital status, employment status, and insurance status of all ED patients during the study period (see Appendix A). The second tool, the Blaine Questionnaire (see Appendix B), consisted of five open-ended questions constructed to gather data on factors which contributed to the patient leaving without being seen, how long the patient was sick prior to

requesting care, how long the patient waited before leaving, and where care was obtained after leaving. The questionnaire was utilized to record patient's answers to the five open-ended questions. The two tools were developed specifically for this study; therefore, no validity nor reliability exist. However, questions were determined as relevant to the purpose of this research after a review of the literature and research committee approval.

Procedures

Approval of this study was obtained initially from the Mississippi University for Women Committee on Use of Human Subjects in Experimentation (see Appendix C). Next, permission was secured from the administration of Baptist Memorial Hospital-Golden Triangle (see Appendix D) which provided the ED log books and patient charts.

Patient charts and log books for the 2-week period supplied information on demographic variables, triage classification, time in and time out, and disposition of the patient. These data were transferred to the Blaine Demographic Tool and were used as the basis for demographic data quantification. Data from the Blaine questionnaires were used to describe factors contributing to and reasons for patients leaving without being seen. Data also were collected by retrospective chart reviews of patients who presented to the ED during the study period.

The patients who left the ED were contacted by telephone and asked to voluntarily complete the questionnaire. In order to minimize recall bias, each patient who left was telephoned within 24 hours of the ED visit. Only questionnaires completed in entirety were included.

Method of Data Analysis

Descriptive statistics of patient demographics were utilized to quantify the results into meaningful information and examine the implications of the data. Demographic data were analyzed using mean, range, frequencies, and percentages. Descriptive statistics also were used to analyze the incidence of patients leaving. Responses to Questions 3 through 5 on the Blaine Questionnaire were subjected to content analysis. Responses were organized into common themes, verified by two members of the research committee, and then quantified using percentages.

Chapter IV

The Findings

The purpose of this descriptive ex post facto study was twofold: to identify the incidence of ED patients who leave without treatment and to compare them with ED patients who stay for treatment. Data were collected utilizing two researcher-designed tools: the Blaine Demographic Tool and the Blaine Questionnaire. Johnson's (1968) Behavioral Systems Model provided the theoretical basis for this study. This chapter delineates the sample and the results of data analysis.

Description of the Sample

The sample (N = 671) consisted of patients who presented to the ED between the hours of 7:00 a.m. and 11:00 p.m. The sample represents two groups: Group A (n = 647) which included all patients who presented to the ED between the hours of 7:00 a.m. and 11:00 p.m. and received a nonurgent triage classification, and Group B (n = 24) which included all patients who presented to the ED between the hours of 7:00 a.m. and 11:00 p.m., received a nonurgent triage classification, but left without being seen by a health care provider.

Results of Analysis

Four research questions guided this study:

1. What is the incidence of ED patients leaving without being seen by a health care provider? The ED 24-hour volume for the 14-day study period was 1,192 patients. The ED volume during 7:00 a.m. to 11:00 p.m. time frame constituted 80% (n = 958) of that total 24-hour volume. Seventy percent (n = 671) of the patients who presented to the ED during this time were classified as nonurgent when triaged. Four percent of the study sample (n = 24) left the ED without being seen by a health care provider. The length of stay for the patients who left without being seen (Group B) ranged from 13 minutes to 237 minutes or an average of 96 minutes prior to leaving. The length of time between onset of symptoms and when Group B patients sought treatment ranged from 1 hour to 2 months, with a mean of 4.4 days.

2. What are the demographic characteristics of ED patients who leave without been seen by a health care provider? Six demographic variables were utilized including age, sex, race, marital status, employment status, and insurance status. The sample ranged in age from 7 days to 94 years, with a mean age of 28.5 years. In Group B patients 0 to 15 years and 16 to 30 years comprised 84% (n = 20) of the sample. Data further revealed that of the patients who left without being seen

37% (n = 9) were female and 63% (n = 15) were male. After categorizing the sample by race and marital status, results showed that 33% (n = 8) were white, and an overwhelming 83% (n = 20) were single. With regard to method of payment and employment status, 50% (n = 12) of the sample were on Medicaid and 63% (n = 15) were unemployed.

3. How do demographic characteristics of ED patients who leave compare to those who are seen by a health care provider? The six demographic variables used in the study were compared. Two age intervals, the 0 to 15 years and the 16 to 30 years, represented 58% (n = 377) of the sample in Group A while the 0 to 15 years and 16 to 30 years comprised 84% (n = 20) of the sample in Group B. Further comparison of age by group and by day using frequencies is demonstrated in Table 1. Fifty-three percent (n = 342) of Group A were female, and 47% (n = 305) were male as compared to Group B with 37% (n = 9) females and 63% (n = 15) males. Additional data comparing the variable gender are displayed by day using frequencies in Table 2.

Table 1

Comparison of Age by Group by Day Using Frequencies

Age Interval	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-80	81-90	91-100
Group A[a]															
Day 1	11	2	5	5	4	4	3	3	2	3	3	0	0	3	0
Day 2	7	5	4	7	3	2	4	5	4	3	2	0	2	1	0
Day 3	6	2	1	1	2	4	3	2	1	2	4	2	2	1	0
Day 4	6	1	1	4	2	3	6	1	2	2	2	1	0	4	2
Day 5	9	0	6	4	6	5	4	2	4	3	2	1	2	1	0
Day 6	5	1	1	4	4	5	6	4	3	1	3	3	2	0	0
Day 7	9	3	6	2	6	4	6	0	2	1	6	3	5	1	1
Day 8	7	3	4	4	8	2	2	6	5	2	0	1	3	1	0
Day 9	10	3	1	4	9	3	4	5	5	0	0	1	3	0	0
Day 10	14	4	4	4	4	4	1	4	5	1	1	2	0	0	0
Day 11	10	0	3	4	5	6	5	2	5	5	4	1	0	0	0
Day 12	16	5	4	6	1	2	5	5	4	3	2	1	2	0	0
Day 13	6	2	3	0	1	2	5	1	3	2	1	3	3	2	0
Day 14	14	4	4	6	5	4	2	3	2	1	2	0	3	0	0
Total	70	20	29	35	44	32	38	28	28	17	22	12	19	12	3
Group B[b]															
Day 1	4	0	0	0	0	2	0	0	0	1	0	1	0	0	0
Day 2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Day 3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Day 4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Day 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day 6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Day 7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Day 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day 11	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Day 12	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Day 13	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Day 14	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Total	8	2	1	2	4	3	0	0	2	1	0	1	0	0	0

[a]Group A = Those who stayed. [b]Group B = Those who left.

Table 2

Comparison of Sex by Group and by Day Using Frequencies

Group	Sex	
	Male	Female
A[a]		
Day 1	24	24
Day 2	19	30
Day 3	13	20
Day 4	19	18
Day 5	24	25
Day 6	14	28
Day 7	28	28
Day 8	26	22
Day 9	26	22
Day 10	25	23
Day 11	26	24
Day 12	26	30
Day 13	13	21
Day 14	23	27
Total	305	342
B[b]		
Day 1	6	2
Day 2	0	2
Day 3	1	1
Day 4	1	0
Day 5	0	0
Day 6	0	1
Day 7	1	0
Day 8	0	0
Day 9	0	0
Day 10	0	0
Day 11	2	0
Day 12	2	0
Day 13	0	2
Day 14	2	1
Total	15	9

[a]Group A = Those who stayed. [b]Group B = Those who left.

Seventy-four percent (n = 450) of Group A were single while an overwhelming 83% (n = 20) of Group B were single (see Table 3). The majority of Group A utilized commercial insurance as the method of payment as compared to Medicaid as the major source in Group B. Data revealed that Medicaid and the category uninsured represented a combined total of 46% (n = 298) in Group A in contrast to a total of 67% (n = 16) for Group B. Further comparison data on insurance status delineated by group using frequencies are displayed in Table 4. The percent of the sample who were unemployed was the same in each group (see Table 5). Each group was further categorized by race. Group A and Group B revealed 41% (n = 268) and 33% (n = 8) white, respectively (see Table 6). The largest percentages of ED patients who left without being seen by a health care provider were single, black males who were unemployed, uninsured, or underinsured. The majority of ED patients who remained for treatment were single, black, unemployed, uninsured, or underinsured females.

Table 3

Comparison of Marital Status by Group and by Day Using Frequencies

Group	Marital Status	
	Married	Single
A[a]		
Day 1	12	36
Day 2	13	36
Day 3	9	24
Day 4	9	28
Day 5	11	38
Day 6	19	23
Day 7	16	39
Day 8	11	37
Day 9	14	34
Day 10	9	39
Day 11	13	37
Day 12	16	40
Day 13	8	26
Day 14	7	43
Total	167	480
B[b]		
Day 1	3	5
Day 2	0	2
Day 3	0	2
Day 4	0	1
Day 5	0	0
Day 6	0	1
Day 7	0	1
Day 8	0	0
Day 9	0	0
Day 10	0	0
Day 11	0	2
Day 12	0	2
Day 13	0	2
Day 14	1	2
Total	4	20

[a]Group A = Those who stayed. [b]Group B = Those who left.

Table 4

Comparison of Insurance Status by Group Using Frequencies

Insurance Status	Group A[a]	Group B[b]
Uninsured	131	4
Commercial	274	8
Medicare	33	0
Medicaid	167	12
Medicare/Medicaid	23	0
Medicare/Commercial	19	0
Total	647	24

[a]Group A = Those who stayed. [b]Group B = Those who left.

Table 5

Comparison of Employment Status by Group and by Day Using Frequencies

Group	Employment	
	Yes	No
A[a]		
Day 1	14	34
Day 2	17	32
Day 3	12	21
Day 4	11	26
Day 5	18	31
Day 6	19	23
Day 7	20	35
Day 8	22	26
Day 9	18	30
Day 10	16	32
Day 11	21	29
Day 12	23	33
Day 13	11	23
Day 14	15	35
Total	237	410
B[b]		
Day 1	3	5
Day 2	1	1
Day 3	0	2
Day 4	0	1
Day 5	0	0
Day 6	1	0
Day 7	1	0
Day 8	0	0
Day 9	0	0
Day 10	0	0
Day 11	1	1
Day 12	1	1
Day 13	0	2
Day 14	1	2
Total	9	15

[a]Group A = Those who stayed. [b]Group B = Those who left.

Table 6

Comparison of Race by Group and by Day Using Frequencies

Group	Race	
	Black	White
A[a]		
Day 1	27	21
Day 2	30	19
Day 3	17	16
Day 4	26	11
Day 5	26	23
Day 6	22	20
Day 7	31	24
Day 8	29	19
Day 9	25	23
Day 10	28	20
Day 11	38	12
Day 12	35	21
Day 13	15	19
Day 14	30	20
Total	379	268
B[b]		
Day 1	5	3
Day 2	2	0
Day 3	1	1
Day 4	1	0
Day 5	0	0
Day 6	1	0
Day 7	0	1
Day 8	0	0
Day 9	0	0
Day 10	0	0
Day 11	2	0
Day 12	2	0
Day 13	0	2
Day 14	2	1
Total	16	8

[a]Group A = Those who stayed. [b]Group B = Those who left.

4. What are the reasons given by patients for leaving without being seen by a health care provider? Patients belonging to Group B (n = 24) were telephoned within 48 hours after having left the ED without being seen by a health care provider. Seventy-nine percent (n = 19) of patients in Group B responded to the call. Each respondent was asked five open-ended questions concerning their stay in the ED. Data from questions 3, 4, and 5 were analyzed using content analysis. The content analysis was verified by two members of the research committee. Respondents were asked, "Why did you choose the ED for treatment?" The overwhelming majority indicated that they sought care in the ED because they had no physician. The ED being the only place open followed as the second most frequent response, and the ED being quicker and more accessible was given as the third most frequent response. Figure 1 demonstrates by percentage the eight responses to question 3 which were identified after content analysis. Responses to question 4, "Why did you leave the ED?" indicated the single most frequent reason for leaving was that the wait was too long. Figure 2 describes the responses using percentiles. The final questions asked was "Where treatment was received after leaving the ED?" The majority of Group B never received any care after leaving (see Figure 3).

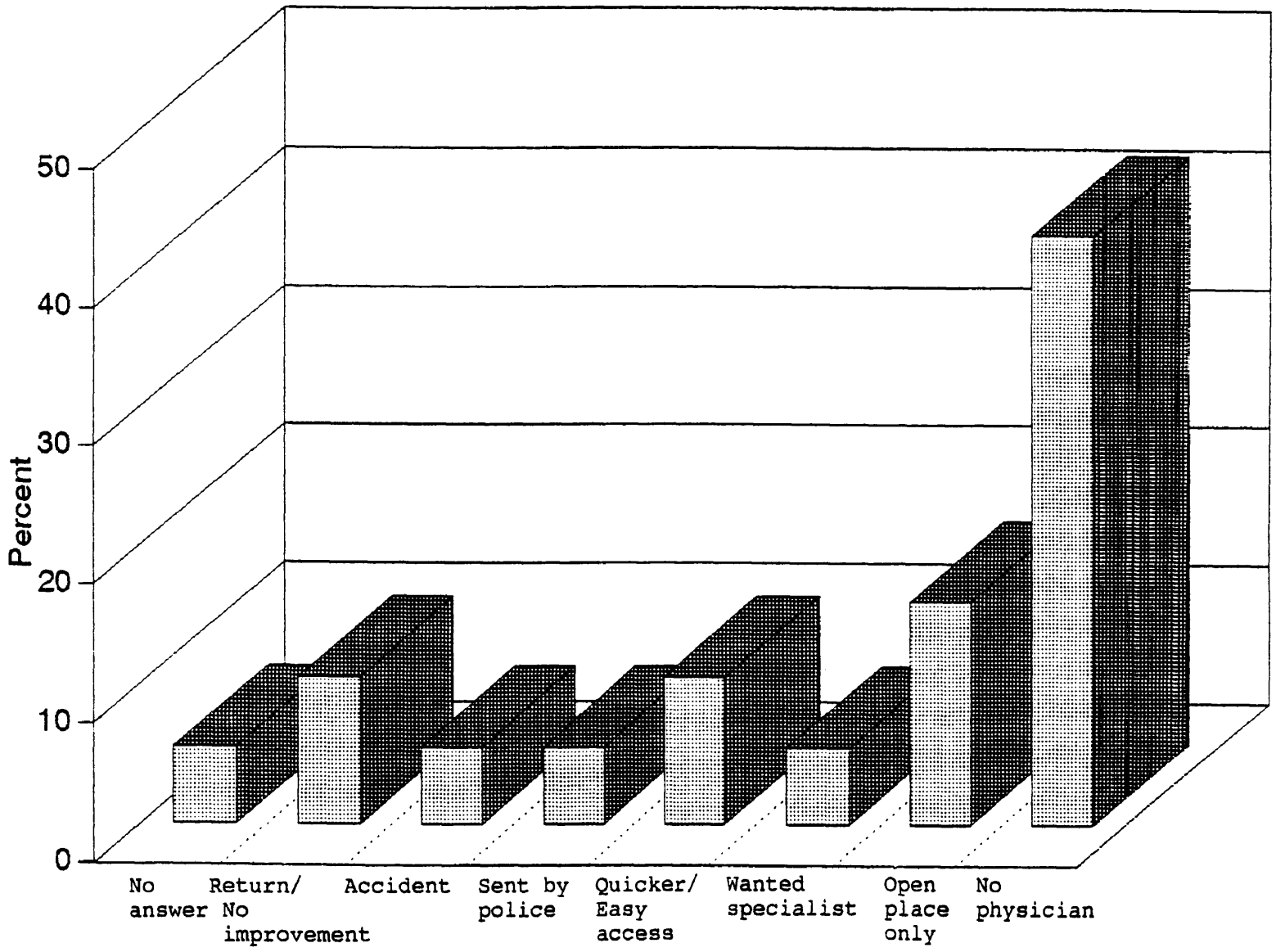

Figure 1. Responses to question 3: Why did you choose the emergency department for treatment? Group B (n = 19).

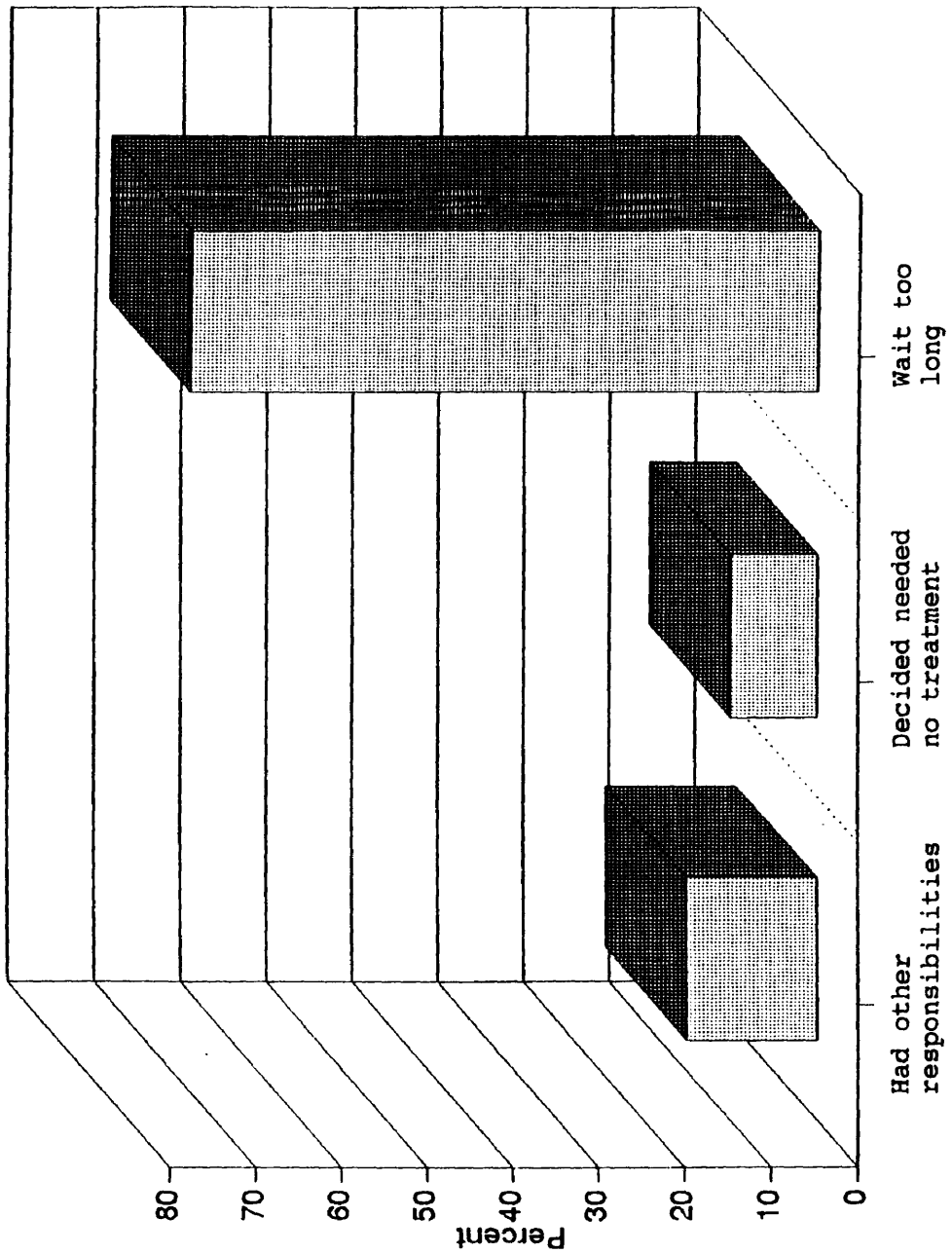

Figure 2. Responses to question 4: Why did you leave the emergency department? Group B (n = 19).

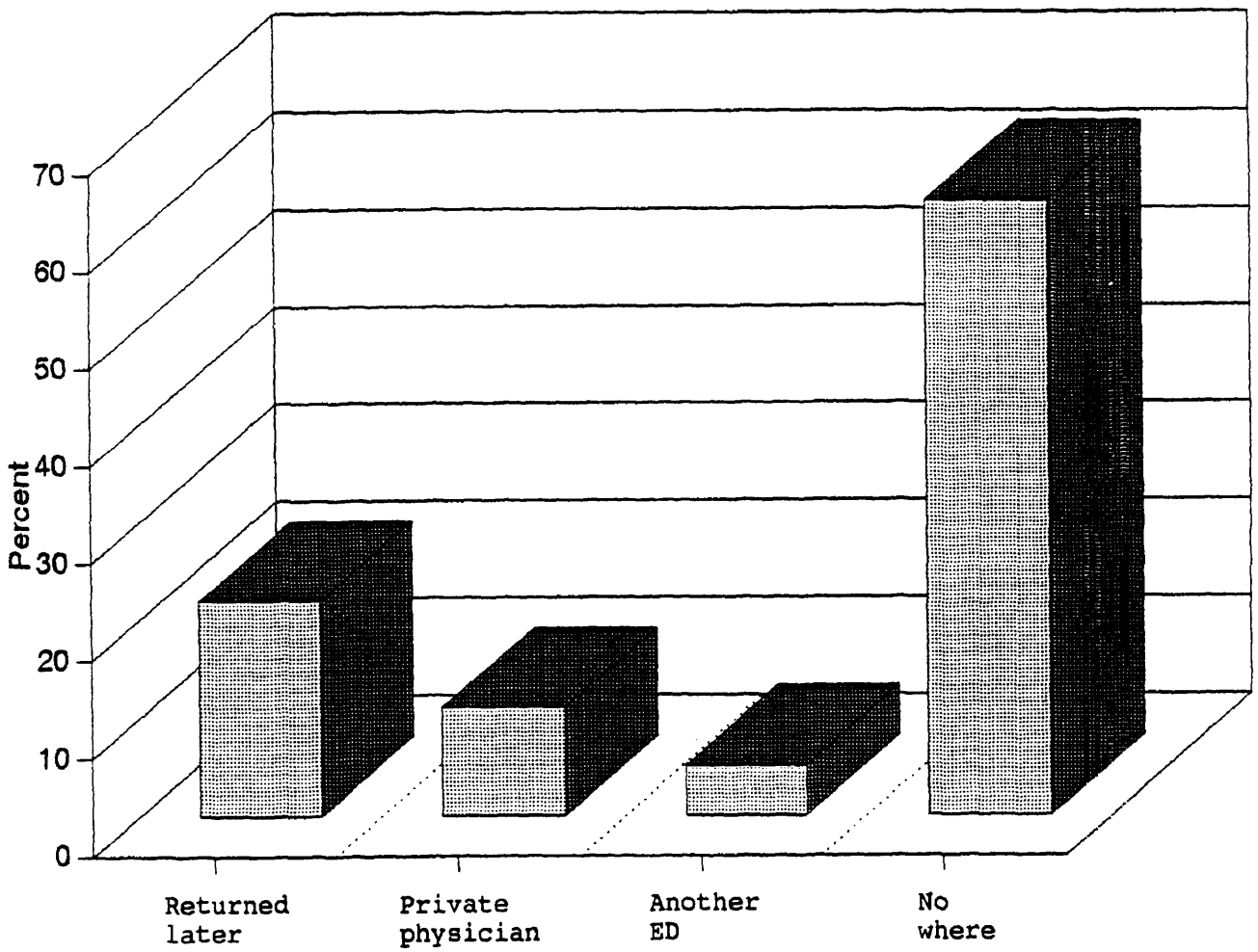

Figure 3. Responses to question 5: Where did you receive care after leaving the emergency department? Group B (n = 19).

Chapter V

The Outcomes

The purpose of this descriptive ex post facto study was twofold: to identify the incidence of ED patients who leave without treatment and to compare them to ED patients who stay for treatment. Johnson's (1968) Behavioral Systems Model provided the theoretical basis for this study. Four research questions guided this study:

1. What is the incidence of ED patients leaving without being seen by a health care provider?

2. What are the demographic characteristics of ED patients who leave without being seen by a health care provider?

3. How do demographic characteristics of ED patients who leave compare to those who are seen by a health care provider?

4. What are the reasons given by patients for leaving without being seen by a health care provider?

Two researcher-designed instruments were utilized to collect data. The Blaine Demographic Tool was used to determine the demographic variables of age, sex, race, marital status, employment status, and insurance status. Data also were obtained through retrospective chart review

from information provided by the patient at the time of registration. The Blaine Questionnaire was used to record patients' answers to five open-ended questions related to their ED visit.

The sample consisted of patients who presented to the ED during the peak activity hours and received a nonurgent classification at the time of triage. The sample was subdivided into two groups. Group A represented all patients who stayed to be treated by a health care provider, and Group B represented all patients who left the ED without being seen by a health care provider. This study sought further understanding of ED overcrowding and its consequences on access to health care.

Summary of Findings

The sample included 671 patients who presented to the ED between the hours of 7:00 a.m. and 11:00 p.m. for a 14-day period. Data were analyzed using means, percentages, and frequencies. Four percent of the study sample (Group B) left the ED without being seen by a health care provider.

Data revealed that the majority of the patients who left without being seen by a health care provider were single black males who were unemployed, uninsured, or underinsured. The majority of ED patients who stayed for treatment were black, single, unemployed, underinsured

females. The most frequently given reason for leaving the ED without treatment was having to wait too long.

Discussion

The findings of this research support conclusions of other researchers who noted that registered ED patients were leaving without being seen. Baker et al. (1991) noticed an increase in the number of registered patients who left without being seen by a health care provider. Bindman et al. (1991) determined that 15% of the patients seen in the ED over a 2-week period left without being seen. The current study results indicate that during the 2-week study period 4% (n = 24) left without being seen by a health care provider. Additionally, of that 4% who left 63% never received health care. These percentages, if annualized, represent a large number of patients who are not receiving care.

Of interest are the findings related to demographics of the sample which contrast to results of Baker (1991) and Bindman (1991). Previous research by Baker and Bindman indicated no significant difference was discovered in demographic characteristics. In contrast, this research data demonstrate differences in some of the demographic characteristics in Groups A and B; however, no difference was revealed in employment status between the two groups. The mean age of these ED patients was not significantly different from the mean age discovered by Garner (1993)

who conducted research in the same geographic area. Noteworthy is the large percentage of ED patients 15 years of age and under who are leaving without receiving treatment. This phenomenon may be impacted by social factors and parental age. Factors such as increased reliance on family and friends for transportation may have affected patients in the 0 to 15 age group from being able to stay prolonged times for treatment. Parental age was not a variable under review; however, it is logical to assume that with the growing number of teen pregnancies, and the high percentage of Medicaid as a payer source that parental age would be young and, consequently, subject to peer pressure and the desire for socialization. It may be this peer pressure, desire for socialization, and lack of independent transportation which precipitated children in the sample leaving without being seen.

By comparison of demographic variables, the two groups under investigation appear different in some respects. Group A had higher percentages of patients between the ages of 31 and 100 years while Group B had a higher percentage of patients between the ages of 0 and 30 years. This trend may explain the percentages of Medicaid in Group B and the percentage of commercial insurance noted in Group A. In Group B more males left without receiving treatment than did females. This variable was not affected by employment demands as the percentage of

unemployed patients was equal in both groups. As indicated from the study results, males were more likely to leave without being seen. It is this researcher's belief this phenomenon may coincide with personality characteristics intrinsic to the female sex, such as the woman's greater propensity to be patient when faced with a prolonged wait time.

The single most common reason the sample participants gave for leaving without treatment was having to wait too long. Findings were consistent with previous research by Baker et al. (1991) and Bindman et al. (1991). The length of stay for Group B ranged from 13 minutes to 3.95 hours. Patients who left without being seen waited an average of 1.6 hours prior to leaving. The research by Baker et al. and Bindman et al. showed a length of stay prior to leaving range of 5 minutes to 17 hours with a mean wait time prior to leaving of 3.5 hours. This research found an association between increased wait time and the incidence of leaving without being seen as the wait time increases. Patients appear to be less likely to stay for treatment when the wait for service is greater than one hour.

Johnson's Behavioral Systems Model provided a useful theoretical basis for this study. Johnson's (1968) theory describes nursing research's goal is "to identify and explain the behavioral system disorders which arise in connection with illness, and develop the rationale for and

means of management" (p. 2). Through this research this goal has been met. Research supported the concept that disequilibrium triggered by illness and further compounded by lack of access to care precipitated use of the ED as a source to secure that care and reestablish equilibrium. Furthermore, abandonment of health care seeking behavior by leaving EDs without being seen because of long waiting times perpetuates a return to disequilibrium and system imbalance. Thus, stressors which caused patients to seek care in an ED compounded by the stressors of long waiting times for treatment were validated by research results.

Conclusions

The conclusions drawn from this study are similar to findings of Baker et al. (1991) and Bindman et al. (1991) and indicate that patterns of access to care have placed additional strain on EDs. Furthermore, these patterns are negatively impacting some patients. This study revealed that 4% of the sample left the ED without being seen. Those who left did so because of the long wait and, consequently, the majority never received health care. Data further demonstrate that patients are utilizing the ED for primary care services as evidenced by 70% of the study sample receiving a nonurgent classification at the time of triage. Data indicate the motivation for using the ED stemmed from lack of a physician and the ED's ease of access. The average length of stay prior to leaving was

1.6 hours and the mean time between onset of illness and when Group B patients sought treatment was 4.4 days. The largest percent of patients who left were single, black males who were unemployed and underinsured or uninsured. Those who remained typically were single, black unemployed females who were uninsured or underinsured.

Implications for Nursing

The problem of access to care is complex. The issue is impacted not only by having a place to receive care but also having adequate numbers of providers available to render that care. Implementation of the nurse practitioner role in the ED would improve access to care, leaving physicians available to see and treat urgent and emergent cases. The majority of ED patients were classified as nonurgent; therefore, the concept of fast-tracking in the ED could improve access to primary care, reduce ED overcrowding, decrease ED waiting times, increase patient satisfaction, and improve health care delivery systems. Implementation of the advanced practice role in the ED will provide a cost-effective alternative health care provider. Utilization of a nurse practitioner in the ED could have provided care for 63% of the study sample who left without being seen and, consequently, never received treatment after leaving.

Recommendations for Further Study

This study suggests several opportunities for future research. A study specifically focused to explore problems with health care for the uninsured and underinsured would provide additional information to add to the current body of knowledge concerning ED use as a source for primary health care. Future studies could provide information on physician practice patterns and treatment access. Further investigation to compare triage classification with actual acuity at completion of treatment could validate the actual volume of ED patient care amenable to the nurse practitioner. A study concerning physician acceptance of the role of a nurse practitioner in ED could provide educational opportunities of those who desire to function in that arena. Finally, research to evaluate the impact on access to care in the ED after implementation of a nurse practitioner staffed ED fast-track would validate conclusions made in this study.

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APPENDIX A

BLAINE DEMOGRAPHIC TOOL

Blaine Demographic Tool

Hospital #	Age	Sex	Race	Marital Status	Employment Status	Insurance Status

APPENDIX B

BLAINE QUESTIONNAIRE

Blaine Questionnaire

Hello, my name is Judy Blaine. I am a hospital employee and a graduate student at MUW. I am conducting a study to determine why the emergency department is so crowded. Participation is voluntary and your confidentiality will be maintained. No names will be used in the data collection process. You recently left the emergency department without being seen by a physician. May I ask you five questions about your visit?

1. What was the length of time between onset of symptoms and seeking treatment?

2. What was the length of stay (from registration time to leaving)?

3. Why did you choose the ED for treatment?

4. Why did you leave?

5. Where did you receive care after leaving the ED?

APPENDIX C

APPROVAL OF MISSISSIPPI UNIVERSITY FOR WOMEN'S COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION

MISSISSIPPI UNIVERSITY FOR WOMEN
Columbus, MS 39701

Office of the Vice President for Academic Affairs
Eudora Welty Hall
P.O. Box W-1603
(601) 329-7142

April 10, 1995

Ms. Judy G. Blane
c/o Graduate Nursing Program
Campus

Dear Ms. Blane:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research.

I wish you much success in your research.

Sincerely,

Thomas C. Richardson
Vice President
for Academic Affairs

TR:wr

cc: Mr. Jim Davidson
Dr. Mary Pat Curtis
Dr. Rent

APPENDIX D

AGENCY CONSENT FORM

Permission Granted for Research Data Collection:

I grant approval to Judy G. Blaine, R.N., BSN, for data collection in the emergency department of BMH-GT for the study entitled "Overcrowding in the emergency department: A barrier to health care access". This study is in fulfillment of the thesis requirement for the Master's degree as a Family Nurse Practitioner. The purpose of the study is to describe the incidence of and compare demographic characteristics of emergency department patients who leave without being seen by a physician with those who stay for treatment. Patient confidentiality will be maintained at all times. No names will be used in the data collection process.

J. Stuart Mitchell
Stuart Mitchell

Administrator
Title

Baptist Memorial Hospital - Golden Triangle
Institution

10/19/99
Date